



INTERNAL AUDIT SUBSTANTIVE TESTING DATA MINING

October 15, 2002

Roanoke City Council Audit Committee
Roanoke, Virginia

We have completed our first data mining audit. Our audit was performed in accordance with generally accepted government auditing standards.

BACKGROUND

Data mining is the search for relationships that can exist in large databases, but are hidden among the vast amounts of data. Computer technology provides auditors with a way to examine automated information by being able to review different files that can highlight relationships between data. These relationships represent valuable knowledge about the database and the files in the database. The techniques and types of data interrogations are almost unlimited.

We selected transactions to test based on specific relationship criteria such as disbursement relationships with employee and vendor addresses. This gave our department the ability to review details of specific areas of interest. It is anticipated that Municipal Auditing will utilize these techniques in the future to aid in the development of future audit plans.

PURPOSE

The purpose of this audit was to identify unusual data relationships in the general ledger and payroll files.

SCOPE

The scope of this audit included transactions in the AMS general ledger files and GEAC payroll files between July 2001 and June 2002.

METHODOLOGY

We utilized ACL and Microsoft Access to examine the data to determine its nature and interrelationships. Our analysis included correlations, anomaly detection, and data filtering. The analysis techniques were aimed at identifying actions that represent deviations from normal activities. We developed audit tests to determine if inappropriate

related party payments were made to employees and/or vendors. Our testwork was based on the selected data populations and sampling was not used.

RESULTS

We evaluated payments to potential related parties and our testing indicated that they were legitimate and adequately supported. During our vendor address analysis, we noted a contractual issue in the Civic Facilities area and as a result initiated a separate audit on the Civic Center.

We also provided the Department of Finance with a listing of duplicate vendor names and addresses. The Department of Finance has reviewed the listing to determine if the duplicate accounts should be consolidated.

CONCLUSION

Based on the results of our audit work, there was one unusual data relationship that required further audit evaluation.

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